

Case Report

Nephrobronchocutaneous fistula

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Accepted 12 February 1994

A fistula between the urinary tract and the lung is a rare occurrence. In 1949 Abeshouse reviewed the world literature and reported that among the abnormal connections between the kidney and other organs, nephropulmonary fistulae were second in incidence to renocolic communications.¹ We have found 70 published cases of nephrobronchocutaneous fistula but, only nine of these were after 1949, suggesting that most cases were from the pre-antibiotic era.

CASE REPORT

A 72 year old man presented with a discharging sinus in the left renal area of three years duration. He was otherwise well. On examination coarse crepitations were noted at the lung bases. There were no other abnormal findings. Apart from an elevated erythrocyte sedimentation rate (55mm/hr) laboratory tests were normal. Haemoglobin 12.2g/dl, white cell count 9.5, 10⁹/l, urea 5.1 mmol/l, sodium mmol/l, potassium 3.5 mmol/l. Midstream urine sample showed no abnormal cells or growth on culture and no acid-fast bacilli were identified. Chest X-ray was normal. The left kidney was non-functional on intravenous urography; ultrasound scan showed stones and this was shown to be pyonephrotic on CT scanning. A sinogram was carried out with a water soluble contrast; during the examination the patient started to cough and a nephrobronchocutaneous fistula was demonstrated. Repeated bacteriological investigations of his sputum failed to reveal any acid-fast bacilli. He refused to have treatment, either surgical or medical, and remains clinically well one year after presentation.

DISCUSSION

Calculous pyonephrosis, primary perinephric abscess and tuberculosis are the most common causes of nephrobronchocutaneous fistula. Other reported cases are shown in the table. The patient often presents with a cough and foul smelling sputum. Other symptoms include loin and chest pain, fever, weight loss and general malaise. The case we described had none of these features. The triad of an enlarged kidney, staghorn calculus and ipsilateral posterior basal pulmonary infiltrate should arouse the suspicion of the clinician². An anatomical explanation as to how a perinephric suppurative process extends

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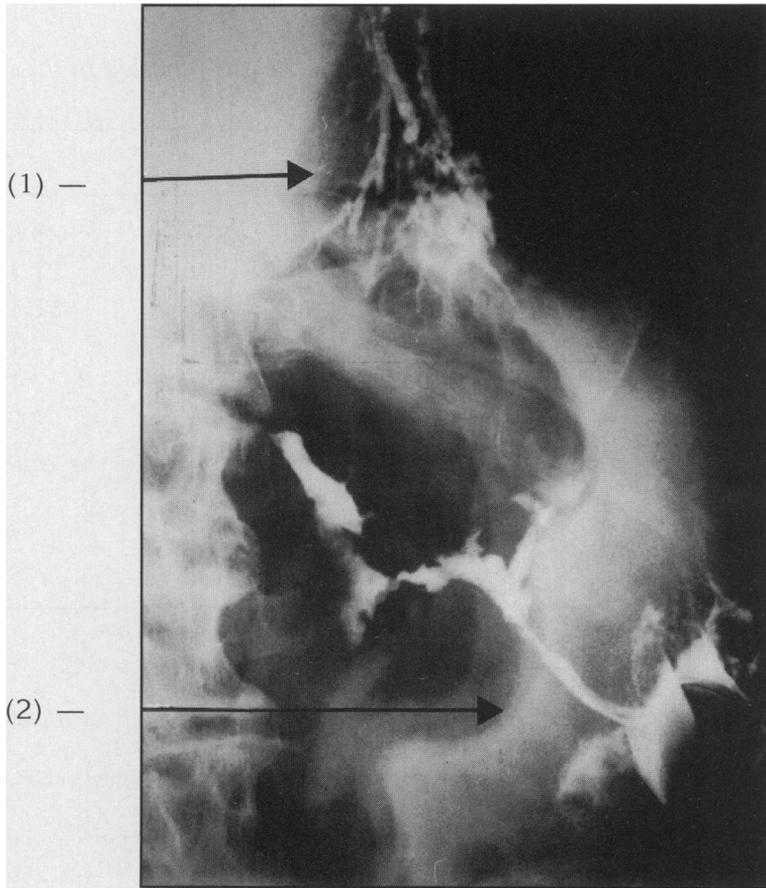


Fig. Sinogram demonstrating nephrobronchocutaneous fistula
 (1) Bronchial part of fistula.
 (2) Renal part of fistula.

up through the diaphragm is that the anterior and posterior perirenal fascial layers meet and are attached to the diaphragmatic fascia above the adrenal glands. The point of this attachment is usually the site of eventual perforation and communication with the pleural cavity and the lung³.

Ultrasound scanning, intravenous urography and CT scanning are useful in establishing the presence of perinephric sepsis and of involvement of the diaphragm and ipsilateral lung. It is unusual for the fistula to be demonstrated radiographically unless there is also a cutaneous fistula. The surgical treatment of nephrobronchocutaneous fistula would necessitate removal of the involved kidney with drainage of the perinephric abscess and empyema. Sometimes however the fistula persists, and a transthoracic technique using a free graft of fascia lata to close the fistulous communication has been described⁴. A case of nephrobronchocutaneous fistula has been successfully treated with antituberculous therapy alone, even though acid-fast bacilli were not isolated⁵.

TABLE

Causes of nephrobronchocutaneous fistula in 70 cases reported in the medical literature.

<i>Causes</i>	<i>No.</i>	
Calculous pyonephrosis	20	28.6%
Prenephric abscess	19	27.1%
Renal tuberculosis	12	17.1%
Non-calculous pyonephrosis	5	7.1%
Echinococcal diseases	5	7.1%
Hydronephrosis	2	2.9%
Undetermined cause	3	4.3%
Pyelonephritis, rupture of dysplastic kidney, gunshot wound, ureterobronchial fistula after nephrectomy	1 each	

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